

REMARKS

I. Formal Matters

Claims 1-21 are all the claims pending in the application.

The Examiner objects to Figures 3, 4, and 5 of the drawings. Applicant is submitting new formal drawings for all Figures 1 through 10 which are believed to overcome this objection. Applicant requests that the Examiner approve the drawings and withdraw the objection.

Applicant thanks the Examiner for allowing claims 1-16.

The Examiner rejects claim 17 under 35 U.S.C. § 102(b) as being allegedly anticipated by European Patent 0963845A1 to Chang (hereinafter "Chang"). Applicant has amended claim 17 for clarification, but traverses the rejection for the reasons below. The Examiner objects to claims 18-21, but indicates that these claims would be allowable if rewritten in independent form including all of the limitations of the original case claim 17.

II. Applicant Respectfully Traverses the Examiner's Rejection of Claim 17 Under 35 U.S.C. § 102(b).

One of the features of Applicant's invention as claimed in claim 17 is "a first expanding step...; a first contracting step...; a second expanding step;...; and a second contracting step...wherein a contracted amount of the pressure chamber in the second contracting step is larger than at least one of a contracted amount of the pressure chamber in the first contracting step and an expanded amount of the pressure chamber in the second expanding step." Chang does not disclose or suggest this feature of claim 17.

The Examiner alleges that Figure 5 of Chang discloses a first expanding step in P3 to P4, first contracting step in P5 to P6, second expanding step in P7 to P8, and a second contracting step in P9 to P10 which correspond to the “first expanding step...; a first contracting step...; a second expanding step;...; and a second contracting step” of claim 17, respectively. Applicant respectfully disagrees.

Assuming *arguendo* that P5 to P6 of Figure 5 corresponds to the first contracting step of claim 17 as the Examiner alleges, Chang does not disclose that “a contracted amount of the pressure chamber in the second contracting step is larger than ...a contracted amount of the pressure chamber in the first contracting step” as required by claim 17. Chang discloses that from P5 to P6, the “pressure generating chamber 31 is contracted from the maximum volume to the minimum volume” (column 17, lines 49-51). This contraction from the “maximum volume to the minimum volume” is the largest contraction of the pressure generating chamber possible, and is therefore greater than or equal to any other contraction, including that of the second contracting step P9-P10.

Furthermore, Figure 5 shows that the expansion from P7 to P8, which the Examiner alleges corresponds to the “second expanding step” of claim 17, is greater than the contraction from P9 to P10, which the Examiner alleges corresponds to the “second contracting step.” Therefore, Chang does not disclose that the “contracted amount of the pressure chamber in the second contracting step” from P9 to P10 is larger than “an expanded amount...in the second expanding step” as required by claim 17.

Because Chang does not disclose or suggest at least the feature of claim 17 of “a contracted amount of the pressure chamber in the second contracting step is larger than at least

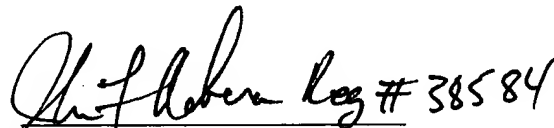
one of...a contracted amount of the pressure chamber in the first contracting step and an expanded amount of the pressure chamber in the second expanding step," claim 17 is not anticipated by Chang. Claims 18-21 are allowable at least by virtue of their dependence on base claim 17.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, D.C. 20037-3213
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

for  Reg # 38584
Grant K. Rowan
Registration No. 41,278

Date: July 10, 2002



APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

RECEIVED
JUL 12 2002
TC2000 MAIL ROOM

IN THE CLAIMS:

The claims are amended as follows:

17. (Amended) A method of driving a liquid jetting apparatus provided with a liquid jetting head which includes a nozzle orifice, a pressure chamber communicated with the nozzle orifice, and a pressure generating element, the method comprising the steps of:

a first expanding step, for driving the pressure generating element so as to expand the pressure chamber, so that a meniscus of liquid in the nozzle orifice is pulled toward the pressure chamber as much as possible;

a first contracting step, for driving the pressure generating element so as to contract the pressure chamber expanded by the first expanding step, so that a center portion of the meniscus is swelled in an ejecting direction of a liquid drop;

a second expanding step, for driving the pressure generating element so as to expand the pressure chamber contracted by the first contracting step, so that a marginal portion of the swelled center portion of the meniscus is pulled toward the pressure chamber; and

a second contracting step, for driving the pressure generating element so as to contract the pressure chamber expanded by the second expanding step, so that the meniscus is again urged in the ejecting direction to increase jetting speed of a satellite liquid drop which follows a main liquid drop,

wherein a contracted amount of the pressure chamber in the second contracting step is larger than at least one of a contracted amount of the pressure chamber in the first contracting step and an expanded amount of the pressure chamber in the second expanding step.-